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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/663,320	09/16/2003	Matthew B. Buczek	13DV-13124 (07783-0149-2)	1327

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EXAMINER	
JOLLEY, KIRSTEN	

ART UNIT	PAPER NUMBER
1762	

DATE MAILED: 03/07/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/663,320	BUCZEK ET AL.	
	Examiner	Art Unit	
	Kirsten C Jolley	1762	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *20 December 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *17-19 and 21-37* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *17-19 and 21-37* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

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DETAILED ACTION

Specification

1. The disclosure is objected to because of the following informalities: The first paragraph of the specification should be amended to indicate the published patent number of the parent application.

Appropriate correction is required.

Claim Objections

2. Claims 28-29 are objected to because of the following informalities:

The period is missing at the end of claim 28.

Claim 29 is an exact duplicate of claim 27.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 18-19, 21-25, 28, and 34-35 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 18, 28, and 34 are vague and indefinite because it is not clear whether each of the plurality of superimposed layers requires the particles.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 17-18, 26, 28, 30, and 32 are rejected under 35 U.S.C. 102(b) as being anticipated by Phillips et al. (US 5,424,119).

Phillips et al. discloses a method of disposing a plurality of non-spherical particles in a fluid medium, each particle including a major dimension, and casting the medium having particles onto the surface of an article, whereby the medium is maintained in the fluid condition for a time selected to enable the surface tension and gravitational forces to locate at least about 50% (or 60%) of the plurality of particles in a position generally along the article surface (col. 6, lines 11-36). The figures illustrates that at least about 50-60% of the plurality of particles are oriented parallel to the surface on which they are cast. As to claims 18 and 28, Figure 4 of Phillips et al. illustrates that multiple superimposed layers may be formed on top of and/or under the layer comprising the non-spherical particles.

Claim Rejections - 35 USC § 102/103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person

> having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

8. Claims 17, 26, 30, and 32 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Masumoto et al. (US 4,891,068).

Masumoto et al. discloses a method of disposing a plurality of non-spherical particles in a fluid medium, each particle including a major dimension, and coating the medium having particles onto the surface of an article, whereby the medium is maintained in the fluid condition for a time selected to enable the surface tension to locate at least about 50% (or 60%) of the plurality of particles in a position generally along the article surface (col. 1, lines 58-68 and col. 3, lines 46-55). Masumoto et al. teaches that surface tension provides the orientation of the powders, however gravitational forces would also necessarily act on the particles in the coating material. While Masumoto et al. does not disclose the percentage of particles positioned in a position parallel to the article surface, it is the Examiner's position that greater than 50% (or 60%) would necessarily be positioned in such a direction because Masumoto et al. generally refers to *all* of the particles laid in an overlapping, parallel manner to form a continuous film of powder. Alternatively, it is the Examiner's position that it would have been obvious to have maintained the medium in a fluid condition for a length of time to locate at least 50% (or 60%) of the particles in a position parallel to the surface since Masumoto et al. teaches that a continuous, overlapping, parallel particle structure is desired to maximize the corrosion and weathering resistance properties of the particles/coating.

Claim Rejections - 35 USC § 103

9. Claims 17-19 and 21-37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Baldi (US 3,958,046) in view of Masumoto et al.

Baldi discloses a method of coating a jet turbine engine component with coatings in order to provide corrosion resistance to the component whereby one of the coatings comprises aluminum flake pigments (see Abstract and col. 5-6). Baldi teaches that the increased protection is greatly improved if the aluminum coating is effectively continuous over the surface being protected, a result that is obtained when leafing-type aluminum particles are applied in amounts that permit the individual aluminum flakes to partially overlap each other over the entire surface being protected (col. 5, lines 8-15). One skilled in the art would have been motivated to look to the prior art for leafing-type aluminum particles that may be used in the process of Baldi that lay in an overlapping manner to form a continuous film. Such aluminum particles are taught by Masumoto et al., as discussed above in section 8. Masumoto et al. teaches that its leaf-shaped particles have a shape such that the leafing phenomenon occurs, whereby the surface tension of the coating material causes the particles to lay overlapping in parallel with the coating surface to form a continuous film, and thus provide improved corrosion and weathering resistance (col. 1, lines 60-68 and col. 3, lines 46-55). It would have been obvious for one having ordinary skill in the art to have incorporated the leaf-shaped aluminum particles taught by Masumoto et al. as the aluminum flakes in the process of Baldi with the expectation of successful results since Masumoto et al. teaches achieving the results desired by Baldi.

Masumoto et al. teaches that surface tension provides the orientation of the powders, however gravitational forces would also necessarily act on the particles in the coating material. While Masumoto et al. does not disclose the percentage of particles positioned in a position

parallel to the article surface, it is the Examiner's position that greater than 50% (or 60%) would necessarily be positioned in such a direction because Masumoto et al. generally refers to *all* of the particles laid in an overlapping, parallel manner to form a continuous film of powder. Alternatively, it is the Examiner's position that it would have been obvious to have maintained the medium in a fluid condition for a length of time to locate at least 50% (or 60%) of the particles in a position parallel to the surface since Masumoto et al. teaches that a continuous, overlapping, parallel particle structure is desired to maximize the corrosion and weathering resistance properties of the particles/coating.

As to claims 23-24 and 36-37, it is noted that a turbine engine is a complex, three-dimensional, non-planar article having curved surfaces.

As to claims 18, 21, 28, 31, and 34, it would have been obvious to have applied plural superimposed layers of Baldi's coating comprising leafing-type aluminum particles, in place of a single thicker layer, with the expectation of similar and equivalent results. Further, multiple layers of leafing-type particles would ensure that a sufficient amount of particles are applied to form a continuous layer of the particles on the engine surface. As to claims 19 and 22, it would have been obvious to have determined the optimum thickness of the coatings through routine experimentation, depending upon number of layers applied and the other ingredients in the coating, in the absence of a showing of criticality.

Conclusion

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Masuda et al. (US 6,103,311) discloses use of a leafing type aluminum flake having

a low surface tension so that it floats up to the surface layer of the coated surface and is oriented parallel to the coated surface (col. 1, lines 19-26 and col. 10, lines 6-18).

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kirsten C Jolley whose telephone number is 571-272-1421. The examiner can normally be reached on Monday to Thursday and every other Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Timothy Meeks can be reached on 571-272-1423. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Kirsten C Jolley
Primary Examiner
Art Unit 1762

kcj